

Monitoring of Microseismicity in the Peach Tree Valley Region with Array Techniques

California Institute of Technology

Jose Luis Garcia-Reyes, Robert Clayton

`jlluis@gps.caltech.edu, clay@gps.caltech.edu`

Abstract

This study is focused on the analysis of microseismicity along the San Andreas Fault in the PeachTree Valley region with the use of array techniques. This zone is located in the transition zone between the locked portion to the south (Parkfield, CA) and the creeping section to the north (Jovilet, et al., JGR, 2014). The goal of the study is to relate the style of seismicity and its spatial distribution to the mechanical state of the Fault. We use a 3D backprojection technique and explore the use of Hidden Markov Models to identify different patterns of seismic activity (Hammer et al., GJI, 2013). The results show the evolution of microseismicity as well as at least two different patterns of seismic signals. The data for the study comes from a 2-week deployment on July, 2014 of 116 single component nodes in a cross-shaped configuration (8.2 km along and 9 km across the Fault).